

Placement of Immediate Implants in the Anterior Maxilla –A Case Report

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ABSTRACT

Introduction: Immediate dental implants have greatly reduced the treatment time and the number of surgical interventions. Recently it has been noted that this treatment modality can be used in aesthetically demanding cases especially the anterior maxilla.

Case Report: In the present case report a 23 year old male patient reported to our unit with fractured upper front teeth. After careful examination and treatment planning immediate implant treatment was initiated. The teeth were extracted atraumatically. We placed two implants into the extraction sockets. The defect was closed with Perioglas graft. The prosthetic rehabilitation was done with metal ceramic crowns.

Conclusion: It was found that the immediate implant therapy has several advantages such as reduced treatment length, preservation of soft and hard tissues surrounding the implant and reduced number of operations. Immediate implant treatment therefore has a great future in the treatment of aesthetic zones.

Keywords: Immediate implant, perioglas, Aesthetic zone

INTRODUCTION

Dental implants have become a standard treatment option for replacement of missing teeth. Originally, it was standard protocol to wait for a period of 6 to 8 months after tooth extraction, to place the dental implant. This was to allow for the healing of the alveolar bone.¹ However this waiting period was a major disadvantage of this treatment modality. Subsequently, attempts were made to shorten this duration of waiting period. Techniques such as early placement, immediate delayed placement and immediate placement were developed.² Moreover, the aesthetic requirement of the patient has to be taken into consideration for shortening the treatment time wherever anterior teeth were to be replaced. The immediate implant placement in an extraction socket was first described by Schulte and Heimke in 1976.³ Not only are the time period and number of operations reduced, several other advantages have been put forth including improved implant survival rates, better aesthetics, higher patient satisfaction as compared to delayed implants and prevention of undue resorption bound to happen post extraction.⁴ It also allows for maintenance of gingival form and promotes periimplant gingival tissue esthetics by maintaining the interdental papillae. Small osseous defects, which are frequently found adjacent to implants placed at the time of tooth extraction, can be grafted with autogenous or synthetic bone grafts. However, because of the nature of this treatment method, a higher risk of complications and failures may be expected.¹ In this case report the harmony of hard and soft tissues was preserved by immediate implant placement.

CASE REPORT

A 23 year male patient reported to the Department of Oral and Maxillofacial Surgery, Army College of Dental Sciences with a complaint of fractured upper front teeth due to trauma. Relative medical history was sound. The following teeth were fractured – 11, 21 and 22. (Fig. 1) Unfavourable prognosis for the teeth was explained to the patient. The patient was informed about various treatment options. The patient being conscious about esthetics and early rehabilitation opted for immediate implant placement.

Pre surgical radiographic evaluation was carried out with OPG (Fig. 2) and IOPA for appropriate treatment planning. After measuring the socket lengths implants (ADIN) of size 4.2*13.5 mm were selected. After injecting 2% lignocaine (1:80,000 conc.), the fractured teeth were atraumatically extracted using a periosteal elevator (Fig. 3). However, during the extraction of 22, the buccal cortical plate got fractured and we decided to proceed with placement of two instead of three implants. The extraction sockets were evaluated for any osseous defects, infection or granulomatous tissue. The sockets were thoroughly debrided with saline solution and after sequential drilling with copious irrigation, the implants were placed (Fig. 4). The residual gaps between the implants and the cortical bone, was filled with Perioglass. The closure of the site was done using 3-0 vicryl sutures. The second stage surgery was done after a healing period of 6 months. The implants were exposed carefully, without damaging the surrounding bone. The gingival former was placed and kept in place for 2 weeks, then removed. A closed tray impression was made, using implant analogues and transfer coping, using addition silicone impression material. The shade of the prosthesis was matched with Vita 3D Shade Guide. A metal ceramic prosthesis was fabricated. The crowns were cemented with Glass Ionomer luting cements on the abutment (Fig. 5) Post operative OPG was taken. Follow up was done over a period of 18 months.

DISCUSSION

There are many indications for immediate implant place-

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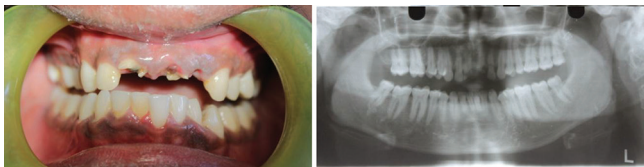


Figure-1: Fractured anterior teeth; **Figure-2:** OPG



Figure-3: Extraction socket; **Figure-4:** Implant placed



Figure-5: After final prosthesis

ment such as tooth extraction due to root fracture secondary to trauma, root resorption, unfavourable crown root ratio. Contraindication include acute infection, loss of bone in periapical region, and severe gingival recession. The proper case selection and surgical technique is important for success of immediate implants.

There are several controversies about local pathology having an adverse effect on the treatment outcome. Chronic infection is not an absolute contraindication, but debridement of the alveolus is recommended. The use of antibiotic prophylaxis is useful in medically compromised patients. In the present study local pathology was not present.¹

Initially, it was said that immediate placement of implants preserves alveolar bone.⁵ However this is considered to be controversial since morphologic hard and soft tissue changes of the post-extraction site may occur despite immediate placement. Also, slightly palatal or lingual placement of the implant in the extraction socket is recommended. This avoids exposure of the implant surface because buccal wall of socket is thin. Also, in order to preserve the alveolar bone, careful extraction is important and it is advised to section multi-rooted teeth before extracting! It is accepted that when a gap of more than 2mm is present between the implant and cortical bone, bone grafting is advised, because the potential for spontaneous bone formation in such defects is poor.⁶ Good results were obtained in our case, where we used Perioglas bone graft. It has been noted in the literature that immediate implant success rates in the maxilla is lower than that of the mandible. Therefore, extra caution

must be exercised while working on the anterior maxillary region, especially with respect to bone preservation.⁷ There are multiple advantages of immediate implants, including reduction in the number of operations and the overall length of treatment. Other suggestive advantages include ideal orientation of the implant, preservation of the bone at the extraction site and other optimal soft tissue esthetics.⁸

CONCLUSION

In this case, our patient met all the indications for immediate implant placement. Using this technique, we were able to provide the patient with a desirable aesthetic and functional outcome. Immediate implant placement may be a highly technique sensitive procedure. However, careful case selection and treatment planning usually result in good success rates.

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